

Claims

1. A method for determining which of a plurality of switches directly connect to a host, wherein ones of said switches comprise at least one port, comprising
5 the steps of:

(a) generating a database from forwarding table information from plural switches on a subnet;

(b) parsing the database to determine switch connectivity information that may be missing from the
10 database information obtained from a given switch;

(c) determining the ports on which ones of the plurality of switches are connected to the host;

(d) determining the ports on which ones of the plurality of switches are connected to other ones of
15 said plurality of switches;

(e) selecting a first switch of said plurality of switches; and

(f) for said selected switch, determining whether other switches in said plurality of switches are
20 connected to said selected switch on the same port as said selected switch is connected to said host, thereby determining whether said selected switch is directly connected to said host.

25 2. The method for determining which of a plurality of switches directly connect to a host according to claim 1, further comprising the steps of:

(g) selecting a next switch;

(h) repeating step (f) and (g) for each of said
30 plurality of switches, thereby determining all switches which are directly connected to said host.

3. An apparatus for determining which of a plurality of switches on a network directly connect to
35 a host, wherein ones of said switches comprise at least

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one port, comprising:

a network interface for connecting with the network and exchanging data therewith;

a processor for generating a database of
 5 forwarding information from switches, determining switch interconnectivity for plural ones of switches, determining the ports on which ones of the plurality of switches are connected to the host, and for determining the ports on which ones of the plurality of switches
 10 are connected to other ones of said plurality of switches, and for selecting a first switch of said plurality of switches, and for said selected switch, determining whether other switches in said plurality of switches are connected to said selected switch on the
 15 same port as said selected switch is connected to said host, thereby determining whether said selected switch is directly connected to said host.

4. The apparatus for determining which of a
 20 plurality of switches directly connect to a host according to claim 3, wherein said processor further selects a next switch and repeats

a) for said selected switch, determining whether other switches in said plurality of switches are
 25 connected to said selected switch on the same port as said selected switch is connected to said host, thereby determining whether said selected switch is directly connected to said host, and

b) selecting a next switch,
 30 for each of said plurality of switches, thereby determining all switches which are directly connected to said host.

5. A method for determining in a subnet of an
 35 Ethernet local area network of a plurality of switches

whether a selected switch directly connect to a host,
wherein ones of said switches comprise at least one
port, comprising the steps of:

(a) accessing a forwarding table for each of the
5 plurality of switches in the subnet and building a
database of information therefrom;

(b) processing said database to complete switch
connectivity information therein;

(c) generating a first table of switch/port/host
10 combinations based on the accessing of the forwarding
tables;

(e) searching through said first table to locate
all switches that list the host;

(e) generating a second table of switches that
15 list the host; and

(f) for a first switch in said second table,
determining whether all other switches in said second
table of switches are connected to said first switch on
the same port as said first switch is connected to the
20 host, thereby determining whether said first switch is
directly connected to said host.

6. The method for determining in a subnet of an
Ethernet local area network of a plurality of switches
25 whether a selected switch directly connect to a host
according to claim 5, further comprising the steps of:

(g) for each other switch in said second table,
determining whether other switches in said plurality of
switches are connected to said each other switch on the
30 same port as said each other switch is connected to the
host, thereby determining whether ones of said each
other switches are directly connected to said host, and
thereby determining all switches which are directly
connected to said host.

7. The method for determining in a subnet of an Ethernet local area network of a plurality of switches whether a selected switch directly connect to a host according to claim 6, wherein the Ethernet local area network comprises a plurality of hosts, further
5 comprising the steps of:

(h) repeating said steps (d)-(g) for ones of the plurality of hosts.

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